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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,109	01/26/2001	Yoshiharu Terawaki	81868.0022	7008

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EXAMINER

LAM, THANH

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 02/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/771,109

Applicant(s)

Terawaki

Examiner

Thanh Lam

Art Unit

2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 26, 2001 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. Figure 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, the "a radial dynamic pressure bearing section," "radial dynamic pressure surfaces" and "a magnetic shield device" in claims 1 and 9.

The "a magnetic adsorbing member" in claims 2 and 10.

The "a yolk member" and the "a mounting member" in claims 3 and 11.

The features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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*Specification*

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior art (figs. 4 and 5 of the application) in view of Nii (Pn. 5,574,322)

Prior art discloses a motor comprising: a radial dynamic pressure bearing section (3a), the radial dynamic pressure bearing section including opposing radial dynamic pressure surfaces (formed between 2a and 3a) formed on a rotor (33) and a stator (20) in which a dynamic pressure is generated in a lubrication fluid between the radial dynamic pressure surfaces to thereby rotatably support the rotor with respect to the stator; thrust magnets (2b,3c) mounted on the rotor and the stator in a manner to oppose to each other for generating a magnetic action to levitate the rotor in an axial direction thereof and rotatably support the rotor in a thrust direction thereof with respect to the stator and a magnetic shield device (holding magnet 2b in fig. 5) provided between

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the thrust magnets and the radial dynamic pressure bearing section. However, the Prior art does not teach the magnetic shield device can be isolating the radial dynamic pressure bearing section from a leak magnetic flux of the thrust magnets.

Nii et al. disclose a magnetic shield device (15 fig. 6) for the purpose of isolating or absorbing a leak magnetic flux of thrust magnets (col. 5, lines 45-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the arrangement of the thrust magnets and the magnetic shield device of the Prior art and by inserting the magnetic shield device as taught by Nii in order to improve the device in eliminating the leak of the magnetic flux of the thrust bearing magnet.

Regarding claims 2 and 10, it is noted that Nii et al. disclose the magnetic shield device is formed from a magnetic absorbing member that absorbs the leak magnetic flux from the thrust magnetic bearings (col. 5, lines 45-62).

Regarding claims 3, and 11, it is noted that Nii et al. disclose the magnetic absorbing member is formed from a yolk member (15 is obvious made from high permeability material such as iron in order to be functioning absorbing or concentrating a magnetic flux) having a magnetic permeability greater than a magnetic permeability of a mounting member (the holder of the magnet 2b of prior art that is low in permeability material, therefore, it cannot isolate the leak magnetic flux of the thrust bearing) provided on at least one of the rotor and the stator on which the thrust magnets are mounted.

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Regarding claims 4 and 12, it is note that an insertion member (15 of Nii et al.) that spaces a distance (see a space formed between 2a and 3a of fig. 5 of Prior art) between the thrust magnets and the radial dynamic pressure bearing section, and the insertion member is formed in one piece with a mounting member provided on at least one of the rotor and the stator on which the thrust magnets are provided.

Regarding claims 5 and 13, it is note that Prior art shows on fig. 4 the rotor is an outer rotor (3) type in which the rotor is disposed outside the stator (2) in a radial direction thereof.

Regarding claims 6 and 14, prior art discloses the thrust magnets are to disposed inside the radial dynamic pressure bearing section in the radial direction, and the magnetic shield device is disposed between the thrust magnets and the radial dynamic pressure bearing section in the radial direction to prevent the magnetic flux of the thrust magnets from affecting the radial dynamic pressure bearing section.

Regarding claims 7 and 15, prior art discloses the stator has a fixed shaft (2a), the rotor is disposed about an outer periphery of the fixed shaft, a bearing sleeve ( 3a) that forms the radial dynamic pressure bearing section is disposed between the fixed shaft and the rotor, and the thrust magnets are mounted inside the fixed shaft and inside the radial dynamic pressure bearing section.

Regarding claims 8, prior art discloses the lubrication fluid is one selected from a group consisting of air and oil.

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Regarding claim 9, Prior art discloses a motor having a rotor (3) and a stator (2), the motor comprising: a radial dynamic pressure bearing section (formed between 2a and 3a of fig. 5) formed between the rotor and the stator, a thrust magnet unit (2b,3c) formed on the rotor and the stator for generating a magnetic action to levitate the rotor in an axial direction thereof and rotatably support the rotor in a thrust direction thereof with respect to the stator and a magnetic shield device (holding magnet 2b in fig. 5) provided between the thrust magnet unit and the radial dynamic pressure bearing section. However, the Prior art does not teach the magnetic shield device can be isolating the radial dynamic pressure bearing section from a leak magnetic flux of the thrust magnet unit.

Nii et al. disclose a magnetic shield device (15 fig. 6) for the purpose of isolating or absorbing a leak magnetic flux of the thrust magnet unit (col. 5, lines 45-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the arrangement of the thrust magnet unit and the magnetic shield device of the Prior art and inserting the magnetic shield device as taught by Nii et al. That provides an improvement of the magnetic shield by eliminating the leak of the magnetic flux of the thrust magnet unit.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.



Thanh Lam

Patent Examiner

Feb. 7, 2002